

POST-INCIDENT ANALYSIS

Executive Analysis of Fire Service Operations in Emergency Management

BY: Bryan Ward
Evesham Fire-Rescue
Evesham, New Jersey

An applied research project submitted to the National Fire Academy
As part of the Executive Fire Officer Program

September 2003

ABSTRACT

The problem this research addresses is that Evesham Fire-Rescue has no formal process of evaluating incidents to identify areas of weakness, strength and safety concerns and to incorporate what has been learned into the department's operating procedures and training lesson plans. Currently the department will rely on the observations of the officers to address any type of operational deficiency.

The purpose of this research is to develop a procedure that can be used by the department to identify areas of weakness, strengths and safety concerns after an incident and to incorporate lessons learned into the department's operating procedures and training lesson plans. Action research was the method selected to answer the following research questions:

1. On what type of incidents should a Post-Incident Analysis be performed?
2. Who should be involved in the Post-Incident Analysis process?
3. What should be examined when performing a Post-Incident Analysis?
4. How will information learned be incorporated into the department's operating procedures and training lesson plans?

To properly research Post-Incident Analysis (PIA), a literature review, survey, and two personal interviews were conducted.

Numerous authors recommend the use of PIA on every call, but survey results indicate that most departments do PIA only on select incidents. The research indicates that everyone at the incident should be involved in the PIA. The different components of a PIA vary from author to author but the majority of them attempt to examine as many areas of the operation as possible.

One important benefit of PIA is to develop lessons learned and incorporate them into the department's operating procedures and training lesson plans. Lessons learned should be

cataloged for review in the future in order to identify trends. It is recommended that all departments should develop a PIA program and use it as an assessment tool for its operations.

TABLE OF CONTENTS

ABSTRACT.....2.

TABLE OF CONTENTS.....4.

INTRODUCTION..... 5.

BACKGROUND AND SIGNIFICANCE.....6.

LITERATURE REVIEW.....8.

PROCEDURES.....18.

RESULTS.....21.

DISCUSSION.....28.

RECOMMENDATIONS.....32.

REFERENCES.....35.

Appendix A (James P. Smith Interview Questions).....37.

Appendix B (Harry R. Carter Interview Questions).....38.

Appendix C (Post-Incident Analysis Survey).....39.

Appendix D (Evesham Fire-Rescue Post-Incident Analysis Procedure).....41.

INTRODUCTION

Evesham Fire-Rescue responds to over 4,500 calls for service annually. The department relies on its' training section to provide the members of the department with current instructional techniques and continuous review of operating procedures to enhance their emergency scene performance and the departments' operations. The only formal method currently used by the department to evaluate the performance of firefighters or overall performance by the department is customer service surveys. The department sends surveys to citizens who have received service from the department in order to obtain their opinion whether they were satisfied or not with the service they received. Unfortunately, citizens are not trained nor have the experience in emergency services to actually determine if members of the department, officers, companies, or even overall department operations are actually being performed properly. Even when citizens do identify legitimate problems there is no written formal process for the department to follow in order to take corrective action.

The problem is that Evesham Fire-Rescue has no formal process of evaluating incidents to identify areas of weakness, strength and safety concerns and to incorporate what has been learned into the department's operating procedures and training lesson plans.

The purpose of this research is to develop a procedure that can be used by the department to identify areas of weakness, strengths and safety concerns after an incident and to incorporate lessons learned into the departments' operating procedures and training lesson plans.

A literature review, survey, and personal interviews will be performed using the action research method. The research will answer the following questions:

1. On what type of incidents should a Post-Incident Analysis be performed?
2. Who should be involved in the Post-Incident Analysis process?

3. What should be examined when performing a Post-Incident Analysis?
4. How will information learned be incorporated into the departments' operating procedures and training lesson plans?

BACKGROUND AND SIGNIFICANCE

Evesham Fire-Rescue is a combination department that delivers fire suppression, Basic Life Support (BLS) emergency ambulance transport, fire prevention and education, emergency management and special operations rescue services to approximately 45,000 residents of the township. Evesham Township is just less than thirty square miles and is located in the southwest portion of the State of New Jersey, approximately ten miles east of the City of Philadelphia, Pennsylvania. As stated earlier the department responds to approximately 4,500 calls for service annually. The breakdown of calls consists of approximately 1,500 fire calls and 3,000 emergency medical calls.

The department has no formal written process of evaluating the performance of the department or its' personnel on any of the 4,500 annual calls. Currently the department will rely on the observations of the officers to address any type of operational deficiency of the personnel, companies or department-wide. Information on corrective action by the officers or lesson learned is rarely distributed to personnel in the department. Department operational deficiencies are usually addressed during chief officer meetings, which are held monthly. There is no written policy or standard format to address department operational deficiencies, or written method of incorporating them into training lesson plans.

The research on Post-Incident Analysis (PIA) is a significant step that needs to be taken in order to correct the problem of evaluating the operations of the department and its personnel. The research also must address how the information learned in the process will be used to correct

the problems and educate future personnel. The department will gain a useful tool for evaluation and education that will improve performance of the personnel and the service to the public. The department personnel will be able to use this tool to understand what works and does not work, what is safe to do, and what may not be safe. Commenting on PIA Harry Carter (2001) believes, “People will come to understand that their actions can, and do, generate outcomes. They will discover that these outcomes can be good or they can be bad. They will come to understand that by changing operational inputs, you can affect operational outputs. And your training program, as well as your operational program, will be improved by everyone’s efforts” (p.64).

The documentation of the PIA and lessons learned can be very valuable to future personnel and the department. The department will be given the ability to look for trends over a period of incidents or years and address operational or safety issues that are discovered. Personnel can use the information as a training tool for themselves and at the company level. It must be remembered that lessons learned can be achieved from even successful incidents. Frank Montagna (1996) explains, “Don’t use this training tool only on fires at which things went wrong. It is just as useful at fires at which your operation worked like clockwork. Less experienced firefighters still can learn from the more experienced ones” (p.4). James Smith (1994) agrees and states, “Well run incidents can be used as benchmarks for future operations” (p.16).

As described above, the benefits of a PIA program can be significant to the department, but it also helps support the operational objectives of the United States Fire Administrative (USFA). By improving the operations of the department and its’ personnel, PIA will help support the following USFA (2002) operational objectives:

1. Reduce the loss of life from fire in the age group 14 years old and below.

2. Reduce the loss of life from fire in the age group 65 years old and above.

3. Reduce the loss of life from fire of firefighters. (p. II-2)

A PIA program is also related to the Executive Fire officer Program course entitled *Executive Analysis of Fire Service Operations in Emergency Management* (EAFSOEM). In the recently completed EAFSOEM course the class held a PIA after each scenario. The students in the class found it extremely beneficial to learn what worked and what did not at the different roles students were required to staff. The PIA was also very important in the team building process in the class as students learned how each other worked and the need to depend on each other to meet the objective of the lesson.

LITERATURE REVIEW

A literature review was conducted to gather and review pertinent information on the subject of Post-Incident Analysis (PIA). The literature reviewed included published Executive Fire Officer Applied Research Projects (EFO ARP), journal articles, national standards, regulations, books and two interviews. Various authors and sources use different terms to refer to a PIA. For the purpose of the research a PIA may also be referred to as a critique, incident critique, and after-action report in the literature review.

Hazardous Materials, Managing the Incident (Noll et al., 1995) states that, “OSHA requires that a critique be conducted for every hazardous material response” (p. 496). The NFPA standards were reviewed to determine if there is a standard on conducting a PIA. While there is no standard solely dedicated to the subject of PIA, several NFPA standards do reference the subject. NFPA 1500 Standard on Fire Department Occupational Safety and Health Program (2002 edition) list the most details regarding PIA. NFPA 1500 (2002) states:

8.8 Post-Incident Analysis

8.8.1 The fire department shall establish requirements and standard operating procedures for a standardized post-incident analysis of significant incidents or those that involve serious injury or death to a fire fighter.

8.8.2 The fire department incident safety officer shall be involved in the post incident analysis as defined in NFPA 1561, Standard on Emergency Services Incident Management System.

8.8.3 The analysis shall conduct a basic review of the conditions present, actions taken, and the effect of the conditions and actions on the safety and health of the members.

8.8.4 The analysis shall identify any action necessary to change or update any safety and health program elements to improve the welfare of members.

8.8.5 The analysis process shall include a standardized action plan for such necessary changes.

8.8.5.1 The action plan shall include the change needed and the responsibilities, dates and details of such actions.

Several Authors describe different types of PIA and their corresponding benefits. James Smith (2002) describes an informal critique, formal critique and a self-critique. He explains that the informal critique is at the company level and should take place at the scene or station. The purpose of the informal critique is to review the actions taken and how they influence the outcome of the overall operation. James Smith (2002) goes on to explain that a formal critique should be conducted after most major or significant incidents. The self-critique is for the individual firefighter to review the operation and to determine his performance and impact on the overall operation. Harry Carter (2001) recommends that a PIA take place while the facts are still

fresh and the hoselines and equipment are still in place. He feels that there are several benefits to conducting an immediate post-fire review:

1. Improve individual performance.
2. Improve teamwork.
3. Teach importance of teamwork
4. Use it to avoid accidents.
5. Learn how to do things better. (p.66)

Harry Carter (2001) also explains that the critique is a critical element of a fire departments training program because it allows for the review of procedures and the comparison of expected outcomes of the operation based upon existing knowledge of the incident. Carter (2001) states, “People will come to understand that their actions can, and do, generate outcomes. They will discover that these outcomes can be good or they can be bad. They will come to understand that by changing operational inputs, you can affect operational outputs. And your training program, as well as your operational program, will be improved by everyone’s efforts” (p.64).

Steve Kidd (2001) explains that departments should conduct an on-site review and a formal critique. He states “Consider critiques after-action reviews, and perform them automatically after each event so they become routine. You can best accomplish after-action reviews in two separate steps: on-site review and the formal critique” (p.25). He further explains that, “By making an after action review a normal part of our planning and preparation duties, we encourage team members to examine their actions with a critical eye. We can then take an honest look at what works-and more importantly- what doesn’t work” (p. 26).

Frank Montagna (1996) states, “Our goal should be to learn from each mistake and to try not to repeat it. We should also teach others not to make the same mistake we made”(p.1).

He goes on to explain, “One mechanism for turning a mistake into a lesson is the postfire critique. At the fire scene or back in quarters, an officer can conduct an informal postfire critique with little preparation” (p.1). The beginning of the article discusses correcting mistakes and developing lesson learned, Montagna (1996) states at the end of the article “Don’t use this training tool only for fires at which things went wrong. It is just as useful at fires at which your operation worked like clockwork. Less experienced firefighters still can learn from the more experienced ones. It also provides a chance for your firefighters to brag about a job well done. Let them. They earned it” (p.4).

The United States Fire Administration (USFA) lists the types of PIA as informal, formal and comparison. The informal is described as being conducted on small or non-complex incidents by the senior officer either at the scene or back in the station. The formal is described as being conducted on large and more complex incidents usually held at a scheduled location, date, and time and is conducted by a facilitator (USFA, 1995). The comparison PIA is different than previously described PIA. The USFA (1995) describes the process as:

The comparison PIA is a relatively new, more comprehensive postincident analysis system. Forms are completed for each level of supervision at an incident: Incident Commander, Division, Group, Sector supervisor (this could also be used for the Branch Director), Company Officer. The subordinate officer’s input is compared to his/her supervisor’s input. The system is more objective. The comparison requires information about orders given as well as actions taken. The forms used by response personnel should be completed as soon after the event as possible, preferably right after return to quarters. The PIA meeting should be held within 72 hours of the incident. (p. SM 10-4)

Taking an opposing view to most authors Tom Brennan (1996) describes how both the

traditional formal and informal critiques are of little value. Regarding the formal critique, Brennan states, “It occurs too late after the operation. Stories related are not factual—they represent regurgitations of standard operating procedures already in place (at least the ones that cannot be checked). Untruths are made up and told and retold until they become truths—both to the speaker and the listener” (p. 1).

The correct procedure is what Tom Brennan (1996) calls the “Proper Critique”. In order to conduct the “Proper Critique” Brennan describes:

The time to have a critique is right after being released by the incident commander and before beginning to take up. Information is fresh in everyone’s mind. All are present to participate. All equipment is still available and some still in place. Apparatus is still in place and relational to the fire structure and other apparatus. Hoselines are still stretched, and hydrant hookups are still made (at least the important ones). Most important—the building (or other operation event) is still in front of you and accessible! (p.1)

The International Society of Fire Service Instructors (IFSTA) (1999) refers to two forms of PIA. One they consider a general review, which is conducted immediately, and the other is a formal critique, which should be conducted on significant incidents within 48 hours of the incident. IFSTA believes that “a critique is a great training tool that can be used to improve the operation of the crews and the overall operation of the department” (p.1).

In addition to the types or levels of PIA, it is important to determine on what type of incident they should be performed. Tom Brennan (1996) believes that the critique should occur every time. He states, “They (firefighters) must believe that it will occur every time (even if all agree there are no lessons). This will not only encourage the memory of each member, but a firefighter will aggressively seek lessons that can be shared later” (p.86). By holding a PIA every

time Frank Montagna (1996) believes,” Everyone can benefit from this drill, and it can be done after every fire or emergency” (p.4). The United States Fire Administration (USFA) (1996) explains, “Fire officers should review every incident in which they have been involved and use each new experience to expand their personal risk evaluation skills. Looking back—after having seen the outcome—at each significant incident allows participants to focus on the accuracy of their observations and their analysis of the situation” (p.108).

The literature reviewed also discussed the various components of PIA. David English (2000) recommends that an analysis program should include:

- Clear policies and procedures
- Designate who will conduct the analysis
- All responding personnel should be included
- Establish goals and objectives of the analysis
- Review incident records
- Reports from personnel on the incident
- Open discussion
- Recommendations for improvement
- Analysis of findings
- Written report distributed to all department members
- Implementation of revisions or improvements as result of the analysis. (p.31)

IFSTA (1999) recommends the following topics that need to be addressed in a critique:

- Recreate the incident through drawings and descriptions of the incident.
- Set the ground rules and the consequences for failure to follow them.
- Start tape of incident

- The first unit to arrive on the scene should describe the conditions that were found upon arrival and what actions this company was forced to take. Review the commands given by the first arriving unit. On the drawing, the officer of the crew should place a drawing of the apparatus showing where it was placed in relation to the incident. The names of crew members should also be listed.
 - Actions of the second due company and identification of crew members.
 - Who was in command and where did they place their vehicle in relation to the building?
 - A time sequence of events needs to be reviewed. This can be done as you continue to configure the incident. Identification of the time sequence can be assisted by the use of the communications tape.
 - Topics in a time sequence will be department specific based upon how department's SOP and operations are prioritized.
- Alarm time, First unit on scene, Water on the fire, Command initiated, Water supply established, Knock down, Primary search, Ventilation, Secondary search, Fire out, Second alarm, Third alarm, Additional alarms. (p. 2)

In the course of conducting the Literature Review two common themes were identified among the authors. The first theme was the need to conduct the PIA without placing blame for mistakes or using the PIA to criticize individuals. In the discussion on how to conduct a PIA, Frank Montagna (1996) states, "The discussion can be lively, but it must not be hostile. The officer must exercise control, smoothing ruffled feathers and keeping the discussion on track by correcting actions without attacking individuals" (p.1). Tom Brennan (1996) states, "Most important, they must believe that there are no mistakes - - there are only lessons! The only

mistake on the fireground is if the member “does it again” (p.86). In establishing ground rules for the critique IFSTA (1999) recommends that the critique be a learning session and for it not to be used as a finger pointing session.

The second theme was to make sure any lessons learned from the PIA were communicated department wide and were implemented into the departments procedures and training program. Lewis Treadwell (2002) recommended, “The results of all formal PIA’s conducted should be documented and distributed department wide utilizing the LFD PIA report (Appendix D). This distribution can be accomplished by making these reports available on the fire department’s intranet page so all personnel can have access to them. Informal PIA’s with content beneficial to department personnel could also be documented and distributed department wide” (p.29). David English (2000) also recommends that written PIA reports be distributed to all department members. James Smith (1994) states, “A report sharing the critiques findings should be written and shared with members who attended, other fire department members and the mutual aid departments who responded” (p.20).

In an effort to help identify all the crucial elements that should be included in an effective PIA two telephone interviews were conducted. Both James P. Smith and Harry R. Carter were selected because they are authors of numerous articles both on the subject of PIA and other modern fire service issues. Both are authors of fire service books and contributing editors to national fire service magazines. Because of their accomplishments and wealth of fire service knowledge both are being considered content experts for the subject of post-incident analysis.

An interview with James P. Smith, Deputy Chief of the Philadelphia Fire Department was conducted to gain first hand information regarding PIA. The entire interview was recorded to allow for review at a later date. Chief Smith granted permission for the recording of the

interview. The following paragraphs are excerpts from the interview with James Smith. The entire interview was not transcribed and only parts of the interview will be discussed. The information discussed below was selected because it was not mentioned previously from his article or book and was determined to be relevant to the research. The questions that were asked to James Smith are listed in Appendix A. The following are excerpts from the interview:

Commenting on when a PIA should be conducted and on what type of incidents, Smith recommended, Informal critique has to occur on every call and a formal critique should occur on every major incident or incidents that are unusual in different ways, unusual meaning possibly serious injury to a firefighter, unusual in the type of operation that had to be used. James Smith also believes that everyone should be involved in the PIA “from the dispatch information, through everything that occurred at the incident scene, and also the Fire Marshal investigation.”

Discussing what areas should be examined in a formal PIA Smith explains All areas and subjects should be thoroughly reviewed and especially areas if someone thinks it can be a learning process for others attending or others reading the critique then I think that also can be brought up. I don’t think it has to be so rigid that you don’t allow other areas to get in there as long as it does not get long winded and you pretty much stay the course on the important areas.”

Commenting on Lessons Learned from the PIA, Smith believes that they should always be reviewed by the Chief and the training officer and training staff so they can see how it can be incorporated into the department’s policies and training. He also recommends that lessons learned be cataloged for review in the future so the department can use it to identify trends.

Later in the interview Smith stressed the importance of never using the PIA as method to place blame. He also cautioned that at some point something may occur on the fireground that may result in the need to conduct investigative interviews or disciplinary interviews and that the department has to make sure that they are always separate from any type of PIA interviews. (J.P. Smith, personal communication, August 16, 2003)

The following paragraphs are excerpts from the interview with retired Battalion Chief Harry Carter. The entire interview was not transcribed and only parts of the interview will be discussed. The information discussed below was selected because it was not mentioned in the literature review from his article or book and was determined to be relevant to the research. The questions that were asked to Harry Carter are listed in Appendix B. The following are excerpts from the interview:

Responding to the question: Do you believe that a critique of some type should occur on every call or just on specific calls that the department determines to be relevant? Harry Carter felt that it was important to conduct some type of critique on every call. It does not have to be a formal critique but a review of the incident should take place at least at the company level. Carter also felt that everyone at the incident should be included in the PIA process.

Discussing what components should be included in the PIA Carter states, “What you’re looking to do is see how the overall operation played out. Which means you have to look at your interaction of engine, truck, and rescue, you have to look at each aspect and see how it came together. While the lines are still in place and the ladders still up gives you the best opportunity to see what you did and discuss it.”

Carter also explained that the time to determine how lessons learned will be

incorporated into the department's procedures and training lesson plans is before the critique and that forms should be developed to record the information to do it. He goes on to state, "If the people in the field see you are not doing anything then it is just window dressing. You have to make sure something happens with information and that there is a method to ensure that it happens with a series of steps that are laid out ahead of time."

Carter recommends that the two most important parts of the PIA are one, make the system a learning experience and never use it to place blame or embarrass members and two, departments have to do it. It is too vital of a tool for departments not to perform post incident analysis. (H.R. Carter, personal communication, August, 20, 2003)

In summary the literature review has been an important part of the research on PIA. The literature review identified the great benefits to developing a PIA and will be used to help focus the development of a PIA program. The different authors had some strong opinions on what works and what does not. The different opinions helped to stress that there is no one best way and that there are strengths and weaknesses to any type of PIA.

PROCEDURES

The action research method was selected to help provide the necessary information to answer the proposed research questions and to develop a PIA procedure for the department. To properly research the subject of Post-Incident Analysis (PIA) it was decided to conduct a literature review, survey, and two personal interviews on the topic of PIA.

The literature review began in the month of April 2003 at the National Fire Academy's Learning Resource Center. Fire service magazines, reports, books and previous Executive Fire Officer applied research projects were reviewed in order to provide up to date relevant information on the topic of PIA.

In the following months numerous online searches were conducted looking for any relevant information regarding PIA. The Evesham Fire-Rescue resource library was also searched for information relating to PIA.

A survey was conducted in the month of August to help provide information in relation to the research questions. The survey was sent to 100 different departments across the United States by e-mail. The break down of surveys included 60 emailed to department across the country outside New Jersey and 40 emailed to local department in New Jersey. The out of state departments selected were mostly from contacts made at the National Fire Academy while attending Executive Fire Officer Courses. Most surveys sent to local fire departments were located in Burlington and Camden Counties in New Jersey. It was difficult to determine an appropriate sample for the survey because it is unknown whether the selected departments that received surveys, one, conduct PIA, two, have a PIA procedure, and three, will complete the survey and return it. More information about the limitations of the surveys will be discussed under the limitations section. A copy of the survey e-mailed is located in Appendix C.

Two telephone interviews were conducted. Both James P. Smith and Harry R. Carter were selected because they are authors of numerous articles both on the subject of PIA's and other modern fire service issues. Both are authors of fire service books and contributing editors to national fire service magazines. Because of their accomplishments and wealth of fire service knowledge both are being considered as content experts for the subject of post-incident analysis.

James P. Smith, Deputy Chief of the Philadelphia Fire Department, and author of *Strategic and Tactical Considerations on the Fireground* was interviewed on August 16, 2003. The interview was a telephone interview and lasted for about fifteen minutes. The questions that were asked to Mr. Smith are listed in Appendix A. The entire interview was recorded to allow

for review at a later date. Mr. Smith granted permission for the recording of the interview. All information that could be used to answer the research questions and assist in the development of a PIA program are listed in the Literature Review section.

Harry Carter, retired Battalion Chief of the Newark Fire Department, and author of *Fire Fighting Strategy and Tactics* was interviewed on August 20, 2003. The interview was a telephone interview and lasted for about fifteen minutes. The questions that were asked to Mr. Carter are listed in Appendix B. The entire interview was recorded to allow for review at a later date. Mr. Carter granted permission for the recording of the interview. All information that could be used to answer the research questions and assist in the development of a PIA program are listed in the Literature Review section.

Both James Smith and Harry Carter were extremely helpful and cooperative with providing information for the research. The author would like to acknowledge their cooperation, educational insight, and for taking the time out of his busy schedule to allow for a personal interview.

Assumptions and Limitations

The survey was emailed to one 100 departments. The author had no way to determine which departments conducted PIA and had formal procedures on conducting them. Keeping that fact in mind the response of returned surveys may be impacted because the individual who received the survey may not respond because his/her department may not conduct them (PIA). Another factor influencing the number of returned surveys will be the workload of the individual it was sent to and their attitude toward the research. One way of attempting to limit this factor is selecting individuals in departments that understand the importance of the research, hence the reason for sending the survey to classmates in the EFO program.

The surveys were developed to obtain information from departments with written PIA procedures. The parameter of having a written PIA procedure was selected because the author believed it was important that the process be conducted in the same manner by everyone in the surveyed department. If a written PIA procedure was not developed for the department the respondent to the survey may conduct the PIA process differently than others in the same department and thus not accurately represent the process. The parameter of having a written PIA process limited the number of respondents that completed the entire survey because of the limited number of departments with written PIA procedures.

It was assumed by the author that the individuals who received the survey understood the questions that were asked and responded to them in a truthful manner.

RESULTS

The findings from the literature review, surveys, and two interviews with content experts will be used to answer the research questions.

Research Question 1. On what type of incidents should a Post-Incident Analysis be performed?

Ten surveys were completed from departments with written PIA procedures. The following table shows what the departments marked off as the type of incidents on which they perform PIA:

<u>Type of Incidents</u>	<u>Number of departments that marked it off.</u>
All calls	<u>0</u>
Multiple alarm calls	<u>4</u>
When Supply line used	<u>0</u>
When handlines stretched	<u>0</u>
Vehicle Accidents	<u>0</u>
Vehicle accidents with entrapment	<u>2</u>
HazMat	<u>5</u>
Technical Rescue	<u>4</u>
When the IC determines	<u>10</u>

When company officer determines _8__

Hazardous Materials, Managing the Incident (Noll et al., 1995) states that, “OSHA requires that a critique be conducted for every hazardous material response” (p. 496).

NFPA 1500 Standard on Fire Department Occupational Safety and Health Program (2002 edition) states:

8.8 Post-Incident Analysis

8.8.1 The fire department shall establish requirements and standard operating procedures for a standardized post-incident analysis of significant incidents or those that involve serious injury or death to a fire fighter.

Smith (2002) explains that a formal critique should be conducted after most major or significant incidents. Kidd (2001) explains that departments should conduct an on-site review and a formal critique. He states “Consider critiques after-action reviews, and perform them automatically after each event so they become routine” (p.25).

Brennan (1996) believes that the critique should occur every time. He states,” They (firefighters) must believe that it will occur every time (even if all agree there are no lessons). This will not only encourage the memory of each member, but a firefighter will aggressively seek lessons that can be shared later” (p.2). Montagna (1996) believes,” Everyone can benefit from this drill, and it can be done after every fire or emergency” (p.4).

The United States Fire Administration (USFA) explains, “fire officers should review every incident in which they have been involved and use each new experience to expand their personal risk evaluation skills. Looking back—after having seen the outcome—at each significant incident allows participants to focus on the accuracy of their observations and their analysis of the situation” (p.108).

James Smith recommends, “Informal critique has to occur on every call and a formal critique should occur on every major incident or incidents that are unusual” (personal communication, August 16, 2003) Harry Carter (personal communication, August, 20, 2003) felt that it is important to conduct some type of critique on every call. It does not have to be a formal critique but a review of the incident should take place at least at the company level.

Research Question 2. Who should be involved in the Post-Incident Analysis process?

The survey indicated that all ten departments that completed the entire survey indicated that all members at the incident should be included in the critique.

James Smith (personal communication, August 16, 2003) and Harry Carter (personal communication, August, 20, 2003) both believe that everyone should be involved in the PIA.

Kidd (2001) recommends: “Once every company commander speaks, others should have an opportunity to comment. We all learn from each other-from rookies all the way to the most senior member of the team” (p. 25).

English (2000) writes “Bring together all participants in an incident to discuss what went wrong and what went right was reported by all survey responders” (p.30). In his research paper he also list that all responding personnel should be included in analysis program.

Research Question 3. What should be examined when performing a Post-Incident Analysis?

The following table indicates the different elements that the departments marked as being examined in their PIA program.

<u>Type of Elements</u>	<u>Number of Departments that marked it off.</u>
Building Structure/Site Layout	_10_
Review Fire Code History	_10_
Dispatch and Response Times	_10_
Site Operations	_10_
Rescue Operations	_10_
Staging	_10_

Communications	_10_
Support Functions	_10_
Safety Sector	_10_
Accountability	_10_
Investigations	_10_
Appropriate policies and procedures	_10_
Goals and objectives of the analysis	_10_
Reports from personnel on the incident	_10_
Recommendations for improvement	_10_
Review of the conditions present, actions taken, the effect of the conditions and actions on the safety and health of the members.	_10_

English (2000) recommends that an analysis program should include:

- Clear policies and procedures
- Designate who will conduct the analysis
- All responding personnel should be included
- Establish goals and objectives of the analysis
- Review incident records
- Reports from personnel on the incident
- Open discussion
- Recommendations for improvement
- Analysis of findings
- Written report distributed to all department members
- Implementation of revisions or improvements as result of the analysis. (p.31)

NFPA 1500 (2002) recommends the following components to be included in a PIA:

8.8.2 The fire department incident safety officer shall be involved in the post incident analysis as defined in NFPA 1561, Standard on Emergency Services Incident Management System.

8.8.3 The analysis shall conduct a basic review of the conditions present, actions taken,

and the effect of the conditions and actions on the safety and health of the members.

8.8.4 The analysis shall identify any action necessary to change or update any safety and health program elements to improve the welfare of members.

8.8.5 The analysis process shall include a standardized action plan for such necessary changes.

8.8.5.1 The action plan shall include the change needed and the responsibilities, dates and details of such actions.

IFSTA (1999) recommends the following topics that need to be addressed in a critique:

- Recreate the incident through drawings and descriptions of the incident.
- Set the ground rules and the consequences for failure to follow them.
- Start tape of incident
- The first unit to arrive on the scene should describe the conditions that were found upon arrival and what actions this company was forced to take. Review the commands given by the first arriving unit. On the drawing, the officer of the crew should place a drawing of the apparatus showing where it was placed in relation to the incident. The names of crew members should also be listed.
- Actions of the second due company and identification of crew members.
- Who was in command and where did they place their vehicle in relation to the building?
- A time sequence of events needs to be reviewed. This can be done as you continue to configure the incident.
- Identification of the time sequence can be assisted by the use of the communications tape.

- Topics in a time sequence will be department specific based upon how department's SOP and operations are prioritized.

Alarm time, First unit on scene, Water on the fire, Command initiated, Water supply established, Knock down, Primary search, Ventilation, Secondary search, Fire out, Second alarm, Third alarm, Additional alarms. (p.2)

James Smith recommends:

All areas and subjects should be thoroughly reviewed and especially areas where if someone thinks it can be a learning process for others attending or others reading the critique then I think that also can be brought up. I don't think it has to be so rigid that you don't allow other areas to get in there as long as it does not get long winded and you pretty much stay the course on the important areas. (J. P. Smith, personal communication, August 16, 2003)

Harry Carter recommends:

What you are looking to do is see how the overall operation played out. Which means you have to look at your interaction of engine, truck, and rescue, you have to look at each aspect and see how it came together. While the lines are still in place and the ladders are still up gives you the best opportunity to see what you did and discuss it. (H. R. Carter, personal communication, August 20, 2003)

Research Question 4. How will information learned be incorporated into the department's operating procedures and training lesson plans?

The survey results indicated that only four out of the ten departments with written PIA procedures develop a written report for the PIA. All four departments post the written reports in the stations or on the Internet and keep the reports on file for future analysis. Only the four

departments that develop a written report for the PIA have a written policy on incorporating the lessons learned into the department's operating procedures and training lesson plans.

NFPA 1500 (2002) recommends the following:

8.8.4 The analysis shall identify any action necessary to change or update any safety and health program elements to improve the welfare of members.

8.8.5 The analysis process shall include a standardized action plan for such necessary changes.

8.8.5.1 The action plan shall include the change needed and the responsibilities, dates and details of such actions.

Treadwell (2002) recommended, "The results of all formal PIA's conducted should be documented and distributed department wide utilizing the LFD PIA report (Appendix D). This distribution can be accomplished by making these reports available on the fire department's intranet page so all personnel can have access to them. Informal PIA's with content beneficial to department personnel could also be documented and distributed department wide" (p.29).

James Smith believes that lessons learned should always be reviewed by the Chief and the training officer and training staff so they can see how it can be incorporated into the department's policies and training. He also recommends that lessons learned be cataloged for review in the future so the department can use it to identify trends. (J. P. Smith, personal communication, August 16, 2003)

Harry Carter explains that the time to determine how lessons learned will be incorporated into the department's procedures and lesson plans is before the critique and that forms should be developed to record the information to do it. He goes on to state, "If the people in the field see you are not doing anything then it is just window dressing. You have to make sure something

happens with information and that there is a method to ensure that it happens with a series of steps that are laid out ahead of time” (H. R. Carter, personal communication, August 20, 2003).

Using the information from the results of the research a draft standard operating procedure on PIA was developed for the department. The PIA procedure is located in Appendix D. The PIA procedure will use three different levels of analysis, self-critique, informal PIA, and formal PIA. In addition to the information obtained from the research questions, all recommendations for PIA were also integrated into the standard operating procedure.

DISCUSSION

The research conducted has outlined many benefits to conducting post-incident analysis. While all the authors in the literature review strongly support the use of the PIA and the benefits for the fire department and its members, the survey results indicate that very few departments actually conduct PIA and even fewer have developed written procedures for conducting them.

While the research has identified a large number of benefits of conducting PIA that fire departments should what to take advantage of, it must be remembered that there is one OSHA regulation and a national standard that require the use of PIA.

Hazardous Materials, Managing the Incident (Noll et al., 1995) states that, “OSHA requires that a critique be conducted for every hazardous material response” (p. 496). NFPA 1500 Standard on Fire Department Occupational Safety and Health Program (2002 edition) states, “The fire department shall establish requirements and standard operating procedures for a standardized post-incident analysis of significant incidents or those that involve serious injury or death to a fire fighter.” (8.8.1)

The author agrees with the majority of the authors from the literature review that a PIA of some type should occur on all incident. On single company incidents it can be as simple as the

self-critique. Smith (2002) explains, “The self-critique is for the individual firefighter to review the operation and to determine his performance and impact on the overall operation” (p. 412). While the term firefighter is used this self-critique should be used by everyone especially officers. It is vital that officers use every incident as a learning experience to build their knowledge base. The United States Fire Administration (USFA) (1996) supports this believe, “fire officers should review every incident in which they have been involved and use each new experience to expand their personal risk evaluation skills. Looking back—after having seen the outcome—at each significant incident allows participants to focus on the accuracy of their observations and their analysis of the situation” (p.108).

While the published literature is recommending the use of PIA on every call, the results of the survey are indicating that the advice is not being acted upon. No department in the survey performs any type of PIA on all calls. The survey results indicate that the majority of departments with written procedures on PIA perform it at the discretion of the Incident Commander or Company Officer.

Who should be involved in the PIA process appears to be more widely accepted throughout the fire service. Smith (J. P. Smith, personal communication, August 16, 2003) and Carter (H. R. Carter, personal communication, August 20, 2003) believe that everyone at the incident should be involved in the PIA. English (2000) writes, “Bring together all participants in an incident to discuss what went wrong and what went right was reported by all survey responders” (p.30). In his research paper he listed that all responding personnel should be included as a component of an analysis program. Kidd (2001) explains: “We all learn from each other—from rookies all the way to the most senior member of the team” (p.25). The results of the survey indicate that all departments with written PIA procedures include everyone at the incident

in the process.

The different components of a PIA vary from author to author but the majority of them attempt to examine as many areas of the operation as possible. As a starting point the author feels it is important to start with the recommendations of NFPA 1500. The main reason for incorporating NFPA 1500 recommendations is because it is a recognized national standard developed for the fire service. After incorporating NFPA 1500 recommendations into the PIA, the process can be expanded as the department determines the appropriate operations to review for evaluation. While the system needs to be a written procedure so it can be performed in a standard fashion each time it is used, it should not be so rigid that items of interest or concern cannot be added. As Smith explains,

All areas and subjects should be thoroughly reviewed and especially areas where if someone thinks it can be a learning process for others attending or others reading the critique than I think that also can be brought up. I don't think it has to be so rigid that you don't allow other areas to get in there as long as it does not get long winded and you pretty much stay the course on the important areas" (J. P. Smith, personal communication, August 16, 2003).

As explained by many authors one of the most important benefits of PIA is to develop lessons learned and incorporate them into the department's operating procedures and training lesson plans. Treadwell (2002) recommended, "The results of all formal PIA's conducted should be documented and distributed department wide utilizing the LFD PIA report (Appendix D). This distribution can be accomplished by making these reports available on the fire department's intranet page so all personnel can have access to them. Informal PIA's with content beneficial to department personnel could also be documented and distributed department wide" (p.29).

English (2000) also recommended that written PIA reports should be distributed to all department members. Smith (1994) states” A report sharing the critiques findings should be written and shared with members who attended, other fire department members and the mutual aid departments who responded.” (p.20)

After information is gathered and lessons learned developed from the PIA, it is important to incorporate this information into the department’s operating procedures, training lesson plans and distribute it to the members. Carter (H. R. Carter, personal communication, August 20, 2003) warns, “If the people in the field see you are not doing anything then it is just window dressing. You have to make sure something happens with information and that there is a method to ensure that it happens with a series of steps that are laid out ahead of time.” Smith (J. P. Smith, personal communication, August 16, 2003) recommends that lessons learned be cataloged for review in the future so the department can use it to identify trends.

The survey results indicated that only four out of the ten departments with written PIA procedures develop a written report for the PIA. All four departments post the written reports in the stations or on the Internet and keep the reports on file for future analysis. Only the four departments that develop a written report for the PIA have a written policy on incorporating the lessons learned into the department’s operating procedures and training lesson plans.

The author feels it is important to discuss Brennan’s opposing view to some of the traditional types of PIA programs. Brennan (1996) describes how both the traditional formal and informal critiques are of little value. Regarding the formal critique, Brennan states” It occurs too late after the operation. Stories related are not factual-they represent regurgitations of standard operating procedures already in place (at least the ones that cannot be checked). Untruths are made up and told and retold until they become truths-both to the speaker and the listener” (p.1).

While Brennan has some valid points on how facts can be distorted with some of the traditional PIA programs, there are steps that can be taken to rectify these problems. The PIA should start at the incident scene. The operations should be discussed and documented so facts are not distorted at a later date if a formal PIA program is used. Both the traditional informal and formal PIA programs have very valid parts, such as lessons learned, that assist the department in improving the operations of the department and the personnel. Developing a written report that explains the lessons learned and incorporating them into the training lesson plans and department operational procedures is the key for improved performance and service to the public.

RECOMMENDATIONS

It is recommended that Evesham Fire-Rescue adopt the Standard Operating Procedure developed for Post Incident Analysis (PIA) located in Appendix D. It is recommended that the following areas discussed in the research should be included in a PIA program:

- Some type of PIA should occur on every call (Brennan, 1996, J.P. Smith, personal communication, August 16, 2003, H.R. Carter, personal communication, August, 20, 2003, USFA, 1996). The PIA for single company incidents can be as simple as a self critique (Smith, 2002) by the firefighters and officers.
- The PIA program should start at the incident scene (Brennan, 1996, Carter, 2001).
- The PIA program should contain all requirements of NFPA 1500 (NFPA 1500, 2002).
- Departments should include the following elements in a formal PIA. The following elements were marked off by all departments that completed the entire survey:

Building Structure/Site Layout

Review Fire Code History

Dispatch and Response times

Site Operations

Rescue Operations

Staging

Communications

Support Functions

Safety Sector

Accountability

Investigations

Appropriate policies and procedures

Goals and objectives of the analysis

Reports from personnel on the incident

Recommendations for improvement

Review of the conditions present, actions taken, and the effect of the conditions and actions on the safety and health of the members

- The PIA program should include everyone involved in the incident (Brennan, 1996, IFSTA, 1999, USFA, 1996, English 2000, J.P. Smith, personal communication, August 16, 2003, H.R. Carter, personal communication, August, 20, 2003, USFA, 1996, Kidd 2001).
- The PIA program should build from the self-critique (Smith, 2002) and include an informal PIA, and formal PIA with guidelines of when each should be utilized.
- The PIA program must clearly state the purpose of the program with emphasis placed on it not being used to criticize or place blame (Brennan, 1996, IFSTA, 1999, English 2000, J.P. Smith, personal communication, August 16, 2003, H.R. Carter, personal communication, August, 20, 2003, USFA, 1996).
- The PIA program should have a written report developed for all formal PIA. (J. P. Smith, personal communication, August 16, 2003, English, 2000, Treadwell 2002)
- All written reports should be distributed department wide and to any mutual aid departments involved in the incident. (J. P. Smith, personal communication, August 16, 2003, English, 2000, Treadwell 2002)

- The lessons learned should be directed to the Chief, Deputy Chiefs and Training Section so they can review the lessons learned and make appropriate changes to procedures and training as they determine appropriate. (J. P. Smith, personal communication, August 16, 2003)
- Any changes shall include the change needed and the responsibilities, dates and details of such actions as listed in NFPA 1500. (NFPA 1500, 2002)
- Written reports should be filed for future review and should be reviewed on an annual basis. (J. P. Smith, personal communication, August 16, 2003)

It is recommended that all departments should develop a PIA program and use it as a regular assessment tool for its' emergency operations.

REFERENCES

Brennan, T. (1996). *The Critique.*, [Online]. Available: http://fe.pennnet.com/Articles/Article_Display.cfm?Section=Archives&Subsection=Display&ARTICLE_ID=58927&KEYWORD=Brennan.

Carter, H. R. (2001). Post-Operation Critiques. *Firehouse* (February, 2001), 64-67.

English, D. L. (2000, October). *A Description of Incident Analysis Programs for the Rocky Mount Fire Department. Executive Fire Officer Program*, Emmitsburg, MD: National Fire Academy.

International Society of Fire Service Instructors. (1999) Instruct-O-Gram: Incident Critique Guide. *International Society of Fire Service Instructors*. (September 1999), 1-3.

Kidd, S. (2001). Post-incident reviews offer unique learning opportunities. *FireRescue* (February, 2001), 25-26.

Montagna, F.C. (1996). *The Effective Postfire Critique.*, [Online]. Available: http://fe.pennnet.com/Articles/Article_Display.cfm?Section=Archives&Subsection=Display&ARTICLE_ID=59175&KEYWORD=Montagna&x=y

National Fire Protection Association. NFPA 1500: *Standard on Fire Department Occupational Safety and Health Program* (2002 ed.). Quincy, MA: Author

Noll, G., Hildebrand, M. & Yvorra, J. (1995). *Hazardous Materials, Managing the Incident*. Stillwater, OK: Fire Protection Publications.

United States Fire Administration (1995, August). *Command and Control of Fire Department Operations at Multi-Alarm Incidents: Student Manual*. Emmitsburg, MD: United States Fire Administration and Federal Emergency Management Agency.

United States Fire Administration (1996, December). *Risk Management Practices in the Fire Service*. Emmitsburg, MD: United States Fire Administration and Federal Emergency Management Agency. 108.

United States Fire Administration (2002, June 1). *Executive Fire Officer Program, Operational Policies and Procedures*. Emmitsburg, MD: United States Fire Administration and Federal Emergency Management Agency.

Smith, J.P. (2002). *Strategic and Tactical Considerations on the Fireground*. Upper Saddle River, NJ: Pearson Education, Inc.

Smith, J.P. (1994). Incident critiques. *Firehouse* (April 1994), 16-20.

Treadwell, L. (2002, July). *A Post Incident Analysis Program for the Lubbock Fire Department. Executive Fire Officer Program*, Emmitsburg, MD: National Fire Academy.

APPENDIX A

Jim Smith Interview Questions:

1. In your book *Strategic and Tactical Considerations on the Fireground* you discuss both the informal and formal critiques. Do you believe that a critique of some type should occur on every call or just on specific calls that the department determines to be relevant?
2. Who should be involved in the post-incident analysis process, with the overall process being defined as the breakdown of operations to the deliver of the critique?
3. In your book *Strategic and Tactical Considerations on the Fireground*, you discuss the following areas to be listed on the final report:
 - First Section: Narrative, Conditions, Problems Encountered, Life Safety Considerations, Fire Department Actions
 - Second Section: General Areas, Communications, Size-Up, Incident Management System, Strategy and Tactics, Medical Assignments, Safety, Apparatus and Equipment, Resources, Outside Agencies
 - Third Section: Lessons Learned

Do you believe that there are any other components of the incident that should be examined when performing a Post-Incident Analysis?

4. When the PIA identifies lessons learned do you feel that it is important to have a written policy on how lessons learned will be incorporated into the departments operating procedures and training lesson plans? If yes, do you have any advice on how to achieve this?
5. One of the common themes among authors that was identified in the literature review was need to make sure that the PIA was not used to place blame or as a session to embarrass members or companies. Do you believe that this concept should be written into the procedure on PIA and should officers receive training on how to conduct a PIA to ensure this does not happen?
6. Is there anything else you would like to say regarding post-incident analysis that you feel is essential in conducting it or developing a procedure for it?

APPENDIX B

Harry Carter Interview Questions:

1. In your Firehouse article on critiques you talk about holding the critique at the scene when the operation is under control. Do you believe that a critique of some type should occur on every call or just on specific calls that the department determines to be relevant?
2. Who should be involved in the post-incident analysis process, with the overall process being defined as the breakdown of operations to the deliver of the critique?
3. In your article on critiques you discuss that all areas of the incident should be examined while the equipment is still in place. Do you believe that there are specific components of the incident that should be examined on either the informal or formal Post-Incident Analysis?
4. When the PIA identifies lessons learned do you feel that it is important to have a written policy on how lessons learned will be incorporated into the departments operating procedures and training lesson plans? If yes, do you have any advice on how to achieve this?
5. One of the common themes among authors that was identified in the literature review was need to make sure that the PIA was not used to place blame or as a session to embarrass members or companies. Do you believe that this concept should be written into the procedure on PIA and should officers receive training on how to conduct a PIA to ensure this does not happen?
6. Is there anything else you would like to say regarding post-incident analysis that you feel is essential in conducting it or developing a procedure for it?

APPENDIX C

Post-Incident Analysis Survey

Name of Your Department: _____

State: _____

1. Does on Fire Department conduct post-incident analysis (PIA) or critiques?

Yes _____ No _____

If you answered "No" thank you for your time and please return the survey to the e-mail address of the sender.

If you answered "Yes" please continue.

2. Does your department have a formal procedure or program for conducting post-incident analysis (PIA) or critiques?

Yes _____ No _____

If you answered "No" thank you for your time and please return the survey to the e-mail address of the sender.

If you answered "Yes" please continue.

3. On what type of incidents does your department conduct a PIA or critique?

Please check what is appropriate or list your response under other:

All calls _____	Multiple alarm calls _____
When Supply line used _____	When handlines stretched _____
Vehicle Accidents _____	Vehicle accidents with entrapment _____
HazMat _____	Technical Rescue _____
When the IC determines _____	When company officer determines _____
OTHER:	

4. Who is involved in the PIA or critique?

Please check what is appropriate or list your response under other:

Everyone at the incident _____	Officers only _____
Chief Officers only _____	Company Officers only _____
OTHER:	

5. What elements of an incident does your department review at a structure fire PIA or critique?

Please check what is appropriate or list your response under other:

Building Structure/Site Layout____ Review Fire Code History____
 Dispatch and Response times____ Site Operations____
 Rescue Operations____ Staging____
 Communications____ Support Functions____
 Safety Sector____ Accountability____
 Investigations____ Appropriate policies and procedures ____
 Goals and objectives of the analysis____
 Reports from personnel on the incident____
 Recommendations for improvement____
 Review of the conditions present, actions taken, and the effect of the conditions and actions on the safety and health of the members ____
 OTHER:

6. Does your department develop a written report from the PIA or critique of lessons learned or identified problems?

Yes____ No____

If you answered “No” thank you for your time and please return the survey to the e-mail address of the sender.

If you answered “Yes” please continue.

7. What does your department do with the written report?

Send it to all members____ Send it to members present at the incident____
 Post it in the stations ____ Place it on the Internet ____
 Keep it on file for future analysis ____
 OTHER:

8. Does your department have a policy for incorporating the lessons learned into the department’s training program and operating procedures?

Yes____ No ____

THANK YOU FOR TAKING THE TIME TO COMPLETE THE SURVEY. YOUR COOPERATION IS APPRECIATED.

PLEASE E-MAIL THE COMPLETED SURVEY BACK TO THE SENDER:

Bryan Ward

Email address: bward@eveshamfire.org

APPENDIX D

EVESHAM FIRE-RESCUE
SOP 102.10
Post-Incident Analysis
09/2003

Purpose:

The purpose is to provide a standard format which to use as a training tool for firefighters and as a review and evaluation method for department operations at emergency incidents. The intent of the procedure is to create a positive learning experience through the review and evaluation of what occurred at the incident and how things can be improved upon or done differently. This procedure shall not be used to place blame, criticize individuals or as an investigative tool for disciplinary purposes.

Scope:

The procedure is applicable to all members of the department.

Procedure:

The Post-Incident Analysis (PIA) program will consist of three different levels of analysis. The three different levels include: Self-Critique, Informal PIA, and Formal PIA.

In order for the procedure to be an effective training tool, post-incident analysis (PIA) should occur on every incident and should involve everyone at the incident. The one rule for conducting a PIA is that it will not be used to place blame or criticize individuals. All participants in the PIA should have this explained to them as a ground rule for participation before conducting the PIA. The individual who is conducting the PIA is responsible to ensure that this occurs. Anyone who cannot comply with the ground rule shall be removed from the PIA.

All PIA should be started at the incident scene when it is practical to do so. The PIA should occur while everything is still deployed and in place from the incident. This allows all participants of the PIA to visualize what occurred, what did not occur, any unusual circumstances or problems that may have been experienced. Members will be able to see how everything relates in the overall operation, why each aspect is important and the thought process and decisions of the Incident Commander (IC).

SELF-CRITIQUE

The self-critique should occur on every incident. The self-critique is a very valuable training tool for both the firefighter and officer. This process allows personnel to review the operation and to determine his performance and impact on the overall operation.

Personnel should treat each incident as a new experience and use it as an opportunity to evaluate their assessment skills and decision-making. Personnel should use this as an opportunity to look back at the incident and determine the accuracy of their

observations and decisions after having seen the outcome. Some of the types of questions personnel should ask themselves include:

- Did I size up the incident correctly?
- Was the layout what I thought it was?
- Was the fire or problem where I thought it was?
- Did we bring the correct hoseline, correct length, or resources?
- If I had an opportunity to do it again what would I do differently?
- Did we experience any safety issues?
- Did we experience any problems that will require the department to change operation issues?

Anytime personnel believe that the department has any type of safety or operational issues that need to be addressed, they should report them to their immediate officer. The officer should evaluate the issues to see if they have merit. Any issues that have merit should be placed in writing and forwarded to their Deputy Chief. If the officer determines that the issue does not have merit, the officer will provide an explanation to the member explaining the reason.

INFORMAL PIA

The Informal PIA should occur on first alarm assignments and single company operations that require the deployment of equipment. The Incident Commander (IC) should include everyone at the incident in the PIA. The IC can choose the areas that will be discussed, but an effort should be made to include as much of the operation as possible. Listed below are some of the areas that the IC should consider discussing during the PIA. The IC can add or skip areas as appropriate for the incident:

Building Structure/Site Layout	Dispatch and Response times
Facility Operations	Strategy and Tactics
Staging	Accountability
Engine, Rescue, Truck, BLS Operations	Communications
Support Functions	

Review of the conditions present, actions taken, and the effect of the conditions and actions on the safety and health of the members.

Review any appropriate policy or procedures.

Develop Recommendations and/or Lessons Learned.

When the PIA results in lessons learned or recommend changes to policies or procedures the IC must develop a written report detailing the following information:

- Date, Location, and Time of the Incident.
- Brief Review of the Departments Operations
- Names and Position of all personnel assigned IMS Functions (IC, Operations, etc.)
- Detailed explanation of all Recommendations and how they will improve the department. High importance should be placed on Safety and Training.
- Detailed explanation of Lessons Learned and what members should consider when involved in a similar incident.

The written report should be forwarded to the Department Chief for review in electronic format. Upon reviewing the report the Chief or his Designee will repair a response on the bottom of the report, to the IC in electronic format that details the following:

- Review Recommendations and Lessons Learned to determine their merit and overall impact on the department. An explanation will be given to support or reject items listed.
- Approved Changes to SOPs or Training will list the appropriate change required and person responsibility for the change, and date it should be effective.
- The Chief or Designee will meet with the IC to discuss any items of concern or clarification.
- A final report will be developed after the meeting that will list the incident information, a brief description of department operations and the approved changes and Lessons Learned. This report will be email to members, posted at each station and placed on the Intranet. Written reports will be filed for future review and will be reviewed on an annual basis.

FORMAL PIA

A Formal PIA will be conducted on all multi-alarm incidents in the township or any incident that the IC determines it would be beneficial for the department and its' members to perform a Formal PIA. A date and location of the Formal PIA will be posted in the stations and emailed to members. All mutual aid departments will be invited to attend.

The Formal PIA process should begin at the scene. The IC or designee should conduct an informal PIA/interview with each member assigned an IMS function (Operations, Extrication Group, etc.), then single companies or a couple companies at a time to

document the tactics deployed, problems encountered and any concerns of each company. All information should be documented for use at the Formal PIA.

For large incidents the IC may want to designate a facilitator to ensure the Formal PIA proceeds without getting off track with prolong discussions or placing the IC in a position where he/she would have to defend decisions.

Before starting the Formal PIA all participants should have the ground rules explained to them. The main rule for conducting a PIA is that it will not be used to place blame or criticize individuals. Anyone who cannot comply with the ground rule shall be removed from the PIA.

The Formal PIA should review the following areas that are applicable to the incident. The IC or facilitator may add additional areas of discussion that would add in the training or safety of department personnel.

Building Structure/Site Layout	Dispatch and Response times
Facility Operations	Strategy and Tactics
Size-up	Accountability
Engine, Rescue, Truck, BLS Operations	Communications
Support Functions	Staging
Fire Code History	Investigation
Review appropriate policies and procedures	Goals and objectives of the analysis
Reports from personnel on the incident	Outside Agencies

Review of the conditions present, actions taken, and the effect of the conditions and actions on the safety and health of the members.

Develop Recommendations and/or Lessons Learned.

After the PIA is conducted a final written report will be developed and posted at each station, on the Intranet, and emailed to each member. A copy will also be offered to any mutual aid departments that participated in the PIA. The final report will also be reviewed by the Chief and kept on file for review on an annual basis.